

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 9, line 17 as follows:

In some embodiments, the storage unit 206 also stores a multimedia user interface 208 for the automated hearing test. More specifically, the storage unit 206 stores a computer-readable version of the user interface 208 that can be executed by the computer 102. During execution, a portion of the user interface 208 may be temporarily loaded from, for example, the hard disk and into the main memory components of the storage unit 206. In addition to the stand-alone arrangement, it is also ~~to~~ possible to execute the user interface 208 from a network. For example, the user interface 208 may be stored on a server computer (not expressly shown) that is accessible to several client computers. This arrangement has an advantage in that updates to the user interface 208 may be quickly and easily implemented for all client computers. Other environments for executing the user interface 208 may also be used without departing from the scope of the invention.

Please amend the paragraph beginning on page 10, line 5 as follows:

Figure 3 shows an exemplary implementation of the user interface 208. As can be seen, the user interface 208 has a number of functional components, including a patient input component 300, a system configuration component 302, a tympanogram, acoustic reflex (AR), and otoacoustic emission testing component 304, a patient training component 306, a patient testing component 308, a patient management component 310~~2~~, and a reporting component 312~~0~~. The various functional components are typically executed in sequence as the automated hearing test progresses, but any functional component can be executed before, during, or after execution of any other functional component as needed. Operator and/or patient interaction with the user interface 208 may be accomplished using any suitable input device, for example, a mouse, keyboard, separate dedicated response button, or using a touchscreen display unit. Where a touchscreen display unit is used, the user interface 208 may display a graphical keyboard (in addition to or instead of a conventional keyboard) from which the operator and/or patient may select alphanumeric characters as needed.

Please amend the paragraph beginning on page 12, line 18 as follows:

Figures 5A-5LM illustrate an exemplary implementation of the system configuration component 302 of the user interface 208. In some embodiments, the system configuration component 302 includes a plurality of screens, each screen presenting a different set of system configuration options from which the operator may select. It should be noted that not all screens have to be present in every embodiment, and that additional screens not shown may be present in some embodiments.

Please amend the paragraph beginning on page 14, line 9 as follows:

In some embodiments, the system configuration component 302 further includes a paging options screen 530. The paging options screen 530 allows the operator to select when a page will be issued. For example, the paging options screen 530 may include a check box 532 for paging the operator at the end of the test session, a check box 534 for paging the operator at the end of each test in the test session, a check box 536 for paging the operator after a certain amount of inactivity by the patient, and a check box 538 for paging the operator if the automated hearing test cannot determine a pure tone threshold for the patient within a predetermined amount of time.

Please amend the paragraph beginning on page 17, line 3 as follows:

In some embodiments, another hearing related test options screen that is included is the tympanometry options screen 576. This tympanometry options screen 576 allows the operator to specify various parameters for the tympanometry test. For example, the tympanometry options screen 576 includes field 578 where the operator may specify a name for the test, the communications port, and may select one of several available to manometer. The tympanometry trigonometry options screen 576 also includes field 580 for allowing the operator to specify the starting pressure and the ending pressure for the test. A plurality of calibration parameters 582 allows the operator to enter calibration values for the left and right ear and to calibrate the tympanometer for those ears accordingly.

Please amend the paragraph beginning on page 20, line 12 as follows:

Before discussing the patient training component 306& further, it may be useful to discuss one aspect of the patient management component 3102 of the user interface 208. In some embodiments, the patient management component 3102 may include a progress indicator 708 that allows the patient and/or operator to track the patient's progress for a given test session. The progress indicator 708 may include a plurality of bubbles, one of which is shown at 710, to indicate the patient's current hearing related test. For example, there is a bubble for the tympanometry test, the acoustic reflex test, the otoacoustic emission test, the pure tone threshold test, the speech reception test, and the speech discrimination test. The bubbles are empty at first, but as the patient begins a particular hearing related test, the bubble for that test is filled in. The color used to fill in the bubbles may be the same for every bubble, or some type of progressive color scheme may be used (e.g., darker colors at the beginning stages and brighter colors at the end).

Please amend the paragraph beginning on page 21, line 1 as follows:

In some embodiments, the progress indicator 708 of the patient management component 3102 may also include progress bars 712 and 714. The progress bars 712 and 714 provide an indication of the completion percentage of the total test session and of each individual hearing related test, respectively.

Please amend the paragraph beginning on page 21, line 14 as follows:

After the general training stage is completed, the patient training component 306 then provides the test specific training. The test specific training may be provided for the specific tests that are about to be performed only, or it may be provided for all the available hearing related tests. In addition, the test specific training may be provided all at once and upfront before beginning any specific test, or the training for a specific test may be provided one test at a time before beginning that hearing related test. This latter embodiment will now be explained in conjunction with an explanation of the patient testing component 308.

Please amend the paragraph beginning on page 22, line 18 as follows:

After the pure tone threshold training is completed, the patient testing component 308 presents the patient with a response screen 810 for responding to the pure tone threshold test. The purpose of the pure tone threshold test is to determine the patient's hearing threshold (i.e., the softest level he can hear) at various frequencies or tones. To this end, the response screen 810 may include a button 812 that the patient can press each time he hears a tone. Where color is used, the button 812 and the screen 810 may have a comfortable yet distinctive color scheme that helps the patient to concentrate on the test. For example, the button may be vivid color such as red, while the surrounding area may have a lighter, softer color. Other suitable color schemes may also be used here as well as throughout the various drawings. In addition, or alternatively, the patient testing component 308 may activate or engage a separate response button (not expressly shown) that the patient may press each time he hears a tone. The automated hearing test ~~than~~then presents a series of tones to the patient, and the patient testing component 308 waits for the patient to respond by pressing the button 812. A help button 814 allows the patient to call the operator at any time.

Please amend the paragraph beginning on page 23, line 18 as follows:

After the speech reception training is completed, the patient testing component 308 presents the patient with a response screen 830 for responding to the speech reception threshold portion of the automated hearing test. The speech reception threshold test is used to determine the softest level at which the patient can hear and recognize a word. To this end, the response screen 830 presents a set 832 of randomly chosen pictures (one shown at 834) to the patient along with the corresponding words (one shown 836) for the pictures. In some embodiments, there are nine randomly chosen pictures and words in a set 832, and the same set 832 is used for the entire speech reception threshold portion, although it is possible to use more than one set. Preferably, the words that are used are compound words with two distinct syllables. For languages where no such words are used, appropriate substitutes may be made. The automated hearing test ~~than~~then verbally presents the words to the patient one at a time, randomly, and at decreasing intensity level, with no emphasis on any syllable. The patient testing component 308 then waits for the patient to select the picture or word from the response screen 830 that matches

the verbally presented word. This procedure is performed for each ear until the lowest or softest verbal presentation level at which the patient can correctly identify 50% of words is determined.

Please amend the paragraph beginning on page 26, line 2 as follows:

An example of a ~~of-a~~-survey instructions screen is shown at 870. The purpose of the survey instructions screen 870 is to instruct the patient regarding how to take the survey. Thus, the survey instruction screen 870 may include a set of instructions 872 that tells the patient, for example, that he should read the questions and then select the best answer. An example of the survey is given at 874. In some embodiments, a verbal message may also be presented that explains the survey in more detail. For example, the verbal message may explain that the purpose of the survey is to gather information about the patient to help the hearing health professional provide a diagnosis and recommend treatment, if necessary.

Please amend the paragraph beginning on page 26, line 15 as follows:

Figure 9 illustrates an exemplary implementation of the patient management component 310. As mentioned above, the function of the patient management component 310 is to notify the operator and/or patient ~~the patient~~ of any problems or contingencies that may arise, and to generally help the patient stay on course through the testing. For example, if the patient is not responding during a test, or is responding too quickly, the patient management component 310 may issue an on-screen warning to the patient. The warning may include a short text message describing the problem to the patient, and may include an on-screen acknowledgement such as an “Okay” button or a “Continue” button. The patient must then acknowledge the warning by pressing the acknowledgement button in order to continue testing. A verbal warning may also ~~a~~company accompany the on-screen warning.

Please amend the paragraph beginning on page 27, line 11 as follows:

Figures 10A-10F illustrate an exemplary implementation of the reporting component 312 of the user interface 208. The reporting component 312 allows the operator to view the results of the hearing test, and to save them in various formats (e.g., xml, html, etc.). In some embodiments, the reporting component 312~~0~~ includes a reporting screen 1000 from which the operator may select a number of options. For example, the operator may press the redo some

test button 1002 to redo one or more hearing related tests. Selecting this button returns the operator to the new session screen 400, but the patient's basic information is retained so that one or more tests may be performed again without having to re-enter the basic information. Pressing the new session button 1004 returns the operator to the new session screen 400, but clears the basic information fields so that new information may be entered.

Please amend the paragraph beginning on page 27, line 22 as follows:

Pressing the view reports button 1006 allows the operator to search and view the results of previous hearing tests saved on the system 100. Pressing the print billing button 1008 prints the billing information associated with the patient, including insurance codes for services rendered. Pressing the print report button 1010 prints a one-page report that contains all the relevant results of the patient's hearing test that a physician usually would like to see.